Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Imaging efficiency: percentage of stress echocardiography, SPECT MPI, stress MRI, or CCTA studies performed at a hospital outpatient facility in the 30 days prior to an ambulatory low-risk, non-cardiac surgery performed anywhere.

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Cardiac imaging for preoperative risk assessment for non-cardiac, low-risk surgery (OP-13): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Measure Domain

Primary Measure Domain

Related Health Care Delivery Measures: Use of Services

Secondary Measure Domain

Clinical Efficiency Measures: Efficiency

Brief Abstract

Description

This measure is used to assess the percentage of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), stress magnetic resonance imaging (MRI), or cardiac computed tomography angiography (CCTA) studies performed at a hospital outpatient facility in the 30 days prior to an ambulatory low-risk, non-cardiac surgery performed anywhere.

Rationale

Cardiac imaging is among the most common imaging services in the Medicare population. Concomitant with the growth in cardiac imaging, the number of non-cardiac, low-risk surgeries and procedures has progressively increased during the past 20 years (Hernandez, Newby, & O'Connor, 2004). While it is important to perform a cardiac risk assessment prior to surgery to identify high-risk beneficiaries, an extensive cardiac workup is unnecessary among both low-risk beneficiaries and for low-risk surgeries. Perioperative risk is proportional both to the severity of the beneficiaries' heart failure and the surgical risk (Savino & Fleisher, 2006). In general, as evidenced in clinical guidelines and the peer-reviewed literature, preoperative cardiac tests should be performed only if test results are likely to influence beneficiary treatment.

Evidence for Rationale

Hernandez AF, Newby LK, O'Connor CM. Preoperative evaluation for major noncardiac surgery: focusing on heart failure. Arch Intern Med. 2004 Sep 13;164(16):1729-36. PubMed

Savino J, Fleisher LA. Assessment of patients with heart disease for fitness for noncardiac surgery. In: Rosendorf, editor(s). Essential cardiology: principles and practice. 2nd ed. Totowa (NJ): Humana Press; 2006.

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Cardiac imaging for preoperative risk assessment for non-cardiac, low-risk surgery (OP-13): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Primary Health Components

Stress echocardiography; single photon emission computed tomography myocardial perfusion imaging (SPECT MPI); stress magnetic resonance imaging (MRI); cardiac computed tomography angiography (CCTA); low-risk non-cardiac surgery

Denominator Description

Number of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), stress magnetic resonance imaging (MRI), and cardiac computed tomography angiography (CCTA) studies performed at the hospital outpatient department (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Of studies in the denominator, number of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), stress magnetic resonance imaging (MRI), and cardiac computed tomography angiography (CCTA) studies performed at the hospital outpatient department within 30 days of non-cardiac, low-risk surgery performed at any location (for example, another hospital or physician's office) (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

See "Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac, Low-Risk Surgery (OP-13): 2017 Annual Reevaluation Report" for a literature review summarizing clinical guidelines and other scientific evidence relevant to the importance and scientific acceptability of this outpatient imaging efficiency measure.

Evidence for Additional Information Supporting Need for the Measure

Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, The Lewin Group. Cardiac imaging for preoperative risk assessment for non-cardiac, low-risk surgery (OP-13): 2017 annual reevaluation report. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2017. 23 p.

Extent of Measure Testing

During the measure development process, the Centers for Medicare and Medicaid Services (CMS) completed testing of the measure's specifications, including evaluation of the measure's scientific acceptability and feasibility of implementation by a Technical Expert Panel. A dry run, evaluating measure performance at each facility eligible for public reporting, was performed prior to measure implementation; no major stakeholder concerns were raised about the specifications, feasibility, or usability at that time. The measure was first endorsed by the National Quality Forum in 2011, and has maintained endorsement since that time.

CMS continues to monitor stakeholder inquiries for concerns about measure calculation or scientific acceptability; feedback received through this vehicle can feed into the measure update cycle, as is appropriate. In fall 2015, CMS completed a robust evaluation of the measure's importance, scientific acceptability (including reliability and validity), feasibility, and usability and use.

Evidence for Extent of Measure Testing

McKiernan C. (Consultant, The Lewin Group, Falls Church, VA). Personal communication. 2016 Feb 9. 1 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Ambulatory/Office-based Care

Ambulatory Procedure/Imaging Center

Hospital Outpatient

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

Unspecified

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Priority

Making Quality Care More Affordable
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Not within an IOM Care Need

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Encounter dates: July 1 through May 31

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Encounter

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Number of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), stress magnetic resonance imaging (MRI), and cardiac computed tomography angiography (CCTA) studies performed at the hospital outpatient department

Initial Patient Population: This measure applies only to Medicare beneficiaries enrolled in original, fee-for-service (FFS) Medicare who were treated as outpatients in hospital facilities reimbursed through the Outpatient Prospective Payment System (OPPS). These measures do not include Medicare managed care beneficiaries, non-Medicare patients, or beneficiaries who were admitted to the hospital as inpatients.

Beneficiaries included in the measure's initial patient population had documentation of stress echocardiography, SPECT MPI, stress MRI, or CCTA studies performed at the hospital outpatient department within a one-year window of claims data. Beneficiaries can be included in the measure's initial patient population multiple times; each stress echocardiography, SPECT MPI, stress MRI, and CCTA studies performed at a facility measured by OPPS is counted once in the measure's denominator.

Exclusions
Beneficiaries who have a clinical diagnosis of one or more conditions for which imaging is considered appropriate are excluded from the measure.

For this measure, beneficiaries with a history of at least three diagnosis codes from the following categories are excluded from the measure's initial patient population; these conditions include diabetes mellitus, renal insufficiency, stroke/transient ischemic attack, prior heart failure, and ischemic heart disease. For these conditions, clinical evidence exists (within a practice guideline or the peer-reviewed literature) that indicates these beneficiaries may be at high risk of cardiac involvement during low-risk surgery; consequently, performing a stress echocardiography, SPECT MPI, stress MRI, or CCTA study prior to an ambulatory non-cardiac, low-risk surgery may be appropriate care. Thus, any beneficiary with a history of three or more of these conditions is excluded from the measure.

Refer to the original measure documentation for additional information on the measure's excluded conditions, such as look-back periods and codes used to define each condition.

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT), International Classification of Diseases, Ninth Revision (ICD-9), and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Of studies in the denominator, number of stress echocardiography, single photon emission computed tomography myocardial perfusion imaging (SPECT MPI), stress magnetic resonance imaging (MRI), and cardiac computed tomography angiography (CCTA) studies performed at the hospital outpatient department within 30 days of non-cardiac, low-risk surgery performed at any location (for example, another hospital or physician's office)

Note: Refer to the original measure documentation for Current Procedural Terminology (CPT), International Classification of Diseases, Ninth Revision (ICD-9), and International Classification of Diseases, Tenth Revision (ICD-10) code categories and corresponding organizational ID (OID) codes for the value set in the Value Set Authority Center (VSAC).

Exclusions
None

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

OP-13 Calculation Algorithm

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Identifying Information

Original Title

OP-13: imaging efficiency measure: cardiac imaging for preoperative risk assessment for non-cardiac low-risk surgery.

Measure Collection Name

Hospital Outpatient Quality Measures

Measure Set Name

Imaging Efficiency

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Funding Source(s)

United States Department of Health and Human Services

Composition of the Group that Developed the Measure

Centers for Medicare & Medicaid (CMS) Contractor

Financial Disclosures/Other Potential Conflicts of Interest

None

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2017 Apr 5

Measure Initiative(s)

Hospital Compare

Hospital Outpatient Quality Reporting Program

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2018 Jan

Measure Maintenance

This measure is reevaluated annually by responding to stakeholder input and incorporating advances in the science or changes in coding.

Date of Next Anticipated Revision

Unspecified

Measure Status

This is the current release of the measure.

This measure updates previous versions:

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 9.0a. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2016 Jan 1. various p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- literature review. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 May. 26 p.

Centers for Medicare and Medicaid Services (CMS). OP-8: MRI lumbar spine for low back pain -- specifications. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); 2014 Apr. 12 p.

Measure Availability

Source available from the QualityNet Web site .

Check the QualityNet Web site regularly for the most recent version of the specifications manual and for the applicable dates of discharge.

NQMC Status

This NQMC summary was completed by ECRI Institute on May 7, 2014. The information was verified by the measure developer on August 8, 2014.

This NQMC summary was updated by ECRI Institute on December 22, 2015. The information was verified by the measure developer on February 9, 2016.

This NQMC summary was updated again by ECRI Institute on February 22, 2018. The information was verified by the measure developer on April 19, 2018.

Copyright Statement

Production

Source(s)

Centers for Medicare and Medicaid Services (CMS). Hospital outpatient quality reporting specifications manual, version 11.0. Baltimore (MD): Centers for Medicare and Medicaid Services (CMS); Effective 2018 Jan. various p.

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